SP-100 Service Manual

2004. Aug. 02

TOMEY CORPORATION

1. Caution for maintenance and Service.

Please take care below points when you do Service and Maintenance.

(1) Service and Maintenance should be done under safety condition.
Before you do any Service and Maintenance, you must check power and unit condition to take.
You must do any Service and Maintenance following this manual with proper tool.

(2) Service and Maintenance must be done correctly.
We use some tube and insulating tape to hold some connector and harness in order to avoid falling down and short circuit. So you have to put back as same as initial condition.
When you ask repair to TOMEY, please inform detail condition and symptoms. And if you change some setting, please put back it as same as initial condition.

(3) After you finish Service and Maintenance, you must check safety and function.
Please check all screws and connectors are put back as same as initial condition. And check some scrap iron does not remain inside of board.
After you finish repair, please check function.

2.Trouble shooting

No.	Symptoms	Page
(1)	LCD does not illuminated, when power switch turns ON.	3
(2)	Nothing is displayed on LCD.	3
(3)	Cannot measure with human eye and model eye.	4
(4)	Measurement data is not printed out.	4

3. Countermeasure.

(1) LCD does not illuminated, when power switch turns ON.

Cause1: Low power of Lithium-ion buttery.
[Countermeasure]>>Check the power of buttery. If it is low, connect AC adopter.

Cause2: Incorrect connection
[Countermeasure]>> Check the connection of all harness that is connected to Main board (792-010A) .

Cause3: Defective Main board.
[Countermeasure]>>Replace Main board (792-010A).

Cause4: Defective LCD.
[Countermeasure]>>Replace LCD (E20-0026).

(2) Nothing is displayed on monitor.
Cause1: Brightness control volume is turn to minimum.
[Countermeasure]>>Adjust this volume.

Cause2: Incorrect connection of LCD.
[Countermeasure]>>Check the connection between LCD (E02-0022) and Min board (792-010A),

Cause3: Defective LCD.
[Countermeasure]>>Replace LCD (E02-0022).

(3) Cannot measure with human eye and model eye.
Cause1: Machine does not go measurement mode.
[Countermeasure]>>Select measurement mode, and then start measurement.

Cause2: Broken Pachy probe.
[Countermeasure]>> Check the condition of Pachy probe.
If problem still remain, replace Pachy probe.

Cause3: Incorrect connections of Pachy probe.
[Countermeasure]>> Check the connection of Pachy probe.

Cause4: Probe angle.
[Countermeasure]>> When you measure human eye or model eye, you have to keep vertical against for eyeball or test piece.

Cause6: Defective Main board.
[Countermeasure]>>Check the Main board (792-010A) and if there is a problem, replace Main board.

(4) Measurement data is not printed out.
Cause1: Paper jamming.
[Countermeasure]>> Check the condition of paper. If it is jamming, remove jamming paper from outlet side and set paper in correct position.

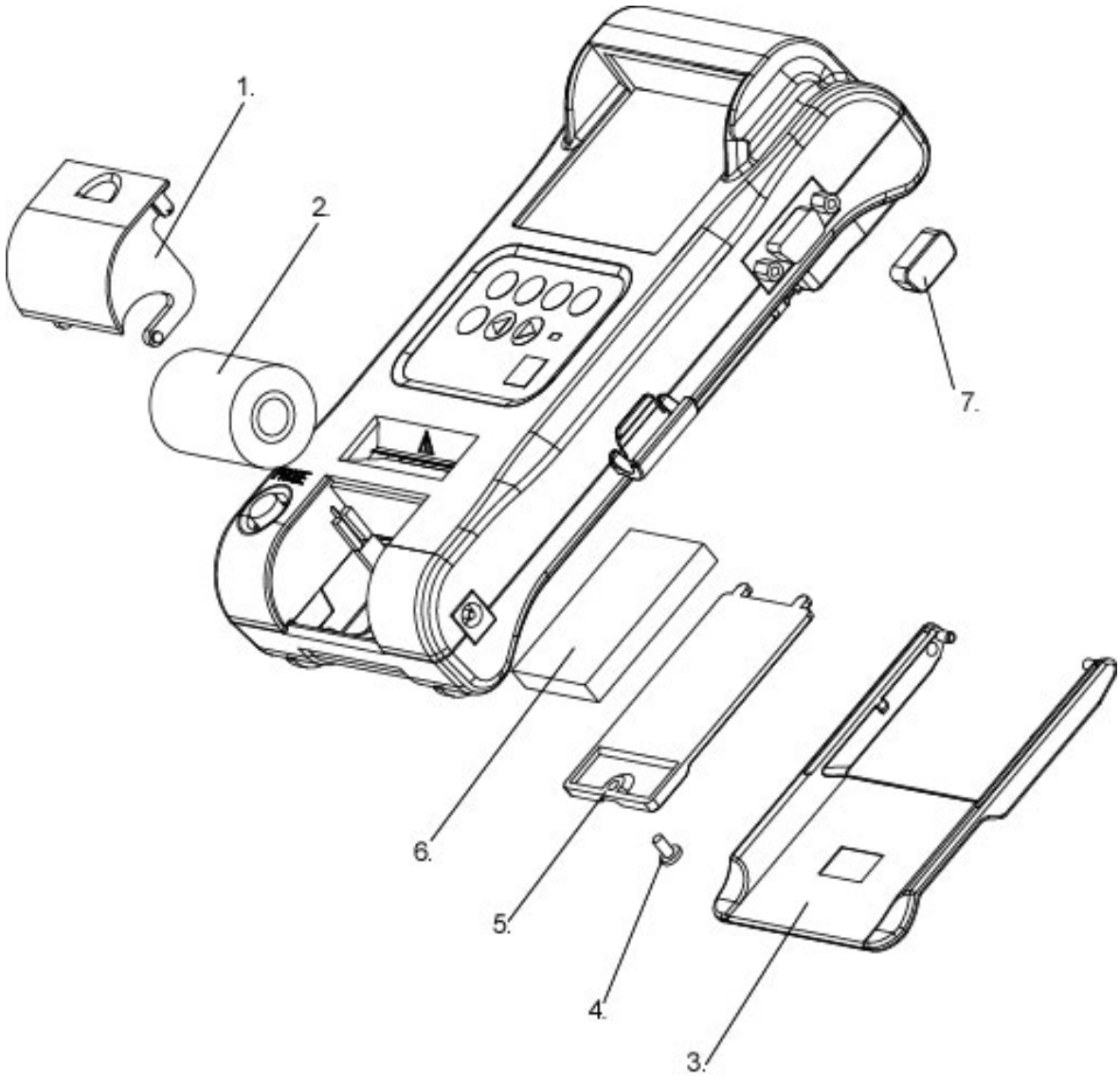
Cause2: Defective Membrane switch.
[Countermeasure]>>Check the Membrane switch (792-021A). If it is broken, replace Membrane switch.

Cause3: Defective Printer.
[Countermeasure]>>Check the Thermal printer (E20-0026). If it is broken, replace Thermal printer.

3. Parts, Parts list and How to disassemble.

A) Open “1. Cover, printer” and remove “2. Printer, Paper”.
Note: When you remove printer paper, it should not be pulled from inlet part.
It will hart printer and be cause of defection of printer.
You should cut printer paper from inlet part and, pull remains from outlet side.

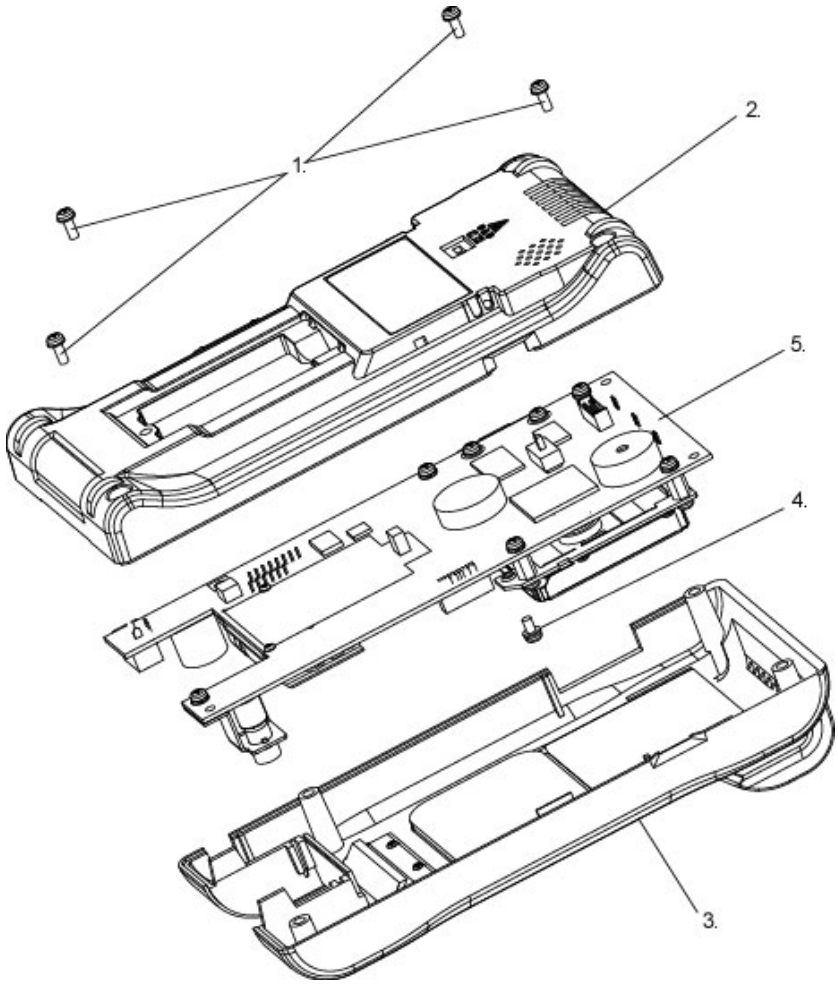
B) Remove “1. Cover, printer” with pushing support part toward to inside.
C) Remove “3. Stand, rear” with pushing support part toward to out side.
D) Remove “4. Self-binding screw” and remove “5. Battery cover, Assy”.
E) Remove “6. Lithium-ion battery” with pulling connector part. (Don’t pull harness).
F) Remove “7. Dust cap”.



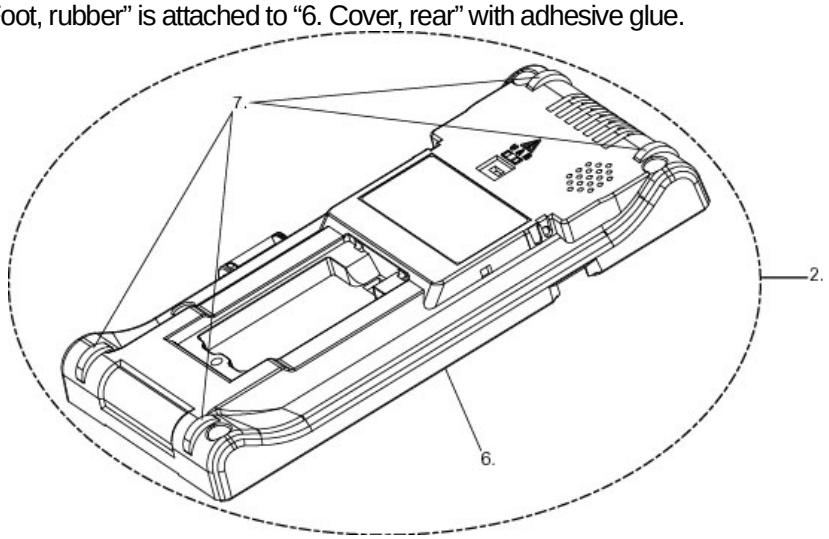
Assembly 792-M001 (Assy, SP-100)

No	Parts number	Parts Name	Remarks
1	792-1003	Cover, printer	
2	C70-0004	Printer paper	
3	792-1004	Stand, rear	
4	---	Self-binding screw	M3*6
5	792-M601	Battery cover, Assy	
6	FA0-0003	Lithium-ion battery.	
7	C77-0012	Dust cap	Hirose: DE-9S-DC1

A) Remove “1. Screws” and remove “2. Rear cover, Assy”.
B) Remove “4. Screws with spring washer” that hold ground cable (ALPET) connected to “3. Front cover, Assy”
C) Remove connector of “Membrane switch” from connector of “5. Main base (process3)”.



Note: “7. Foot, rubber” is attached to “6. Cover, rear” with adhesive glue.



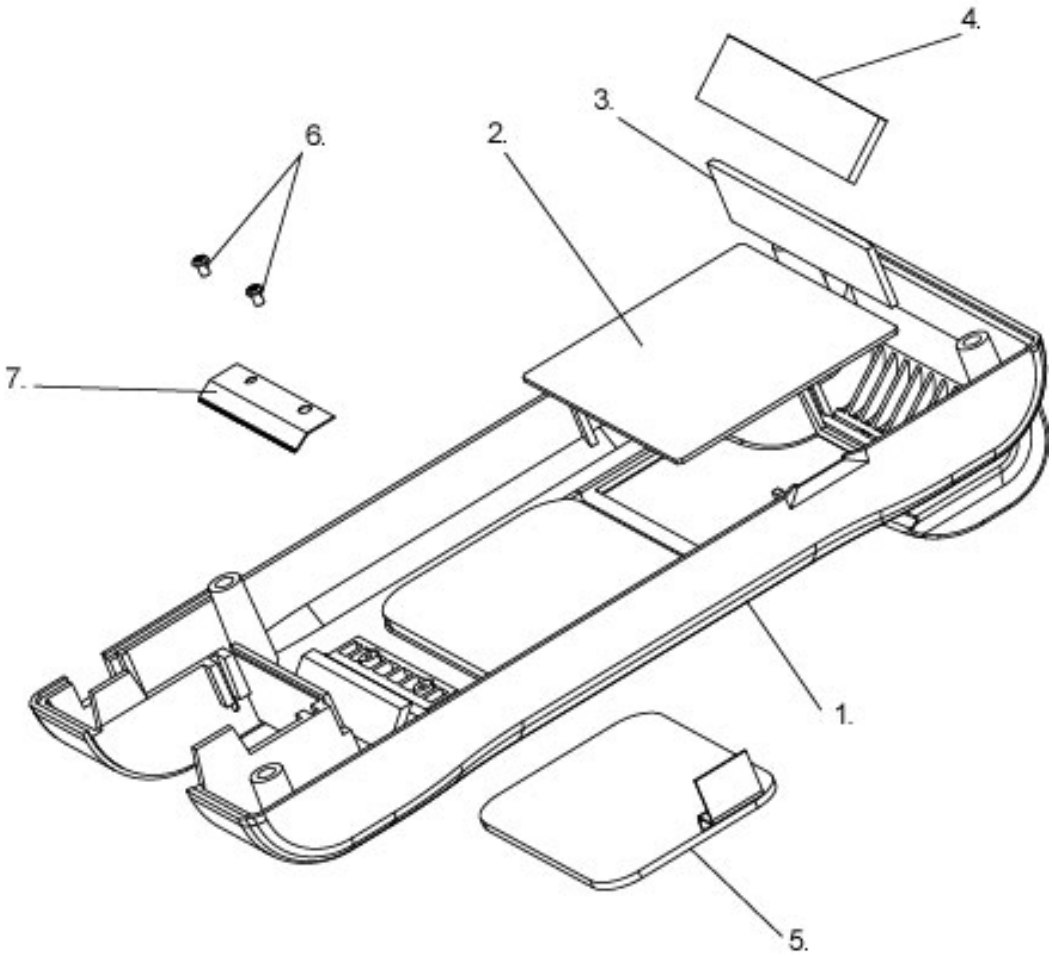
Assembly 792-M011 (Main unit, Sub-Assy)

No	Parts number	Parts Name	Remarks
1	---	Screws	M3*8
2	792-M201	Rear cover, Assy	
3	792-M101	Front cover, Assy	
4	---	Screws with spring washer	M3*6
5	792-M301	Main unit base (process 4)	

Assembly 792-M201 (Rear cover, Assy)

No	Parts number	Parts Name	Remarks
6	792-1002	Cover, Rear	
7	792-1009	Foot, rubber	

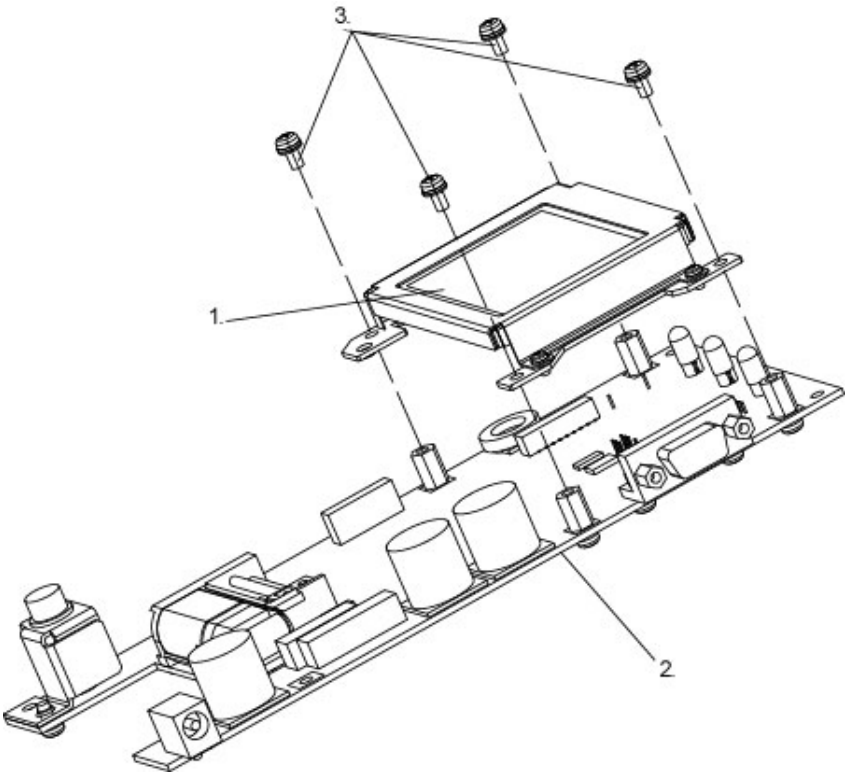
A) Remove “2. Window, LCD” and “3. Window, light diffusion”
B) Remove “4. Mirror, reflect” and “5. Membrane switch” that is attached on “1. Cover, front” by two-sided tape carefully
C) Remove “6. Tapping screw” and remove “7. Printer cutter”



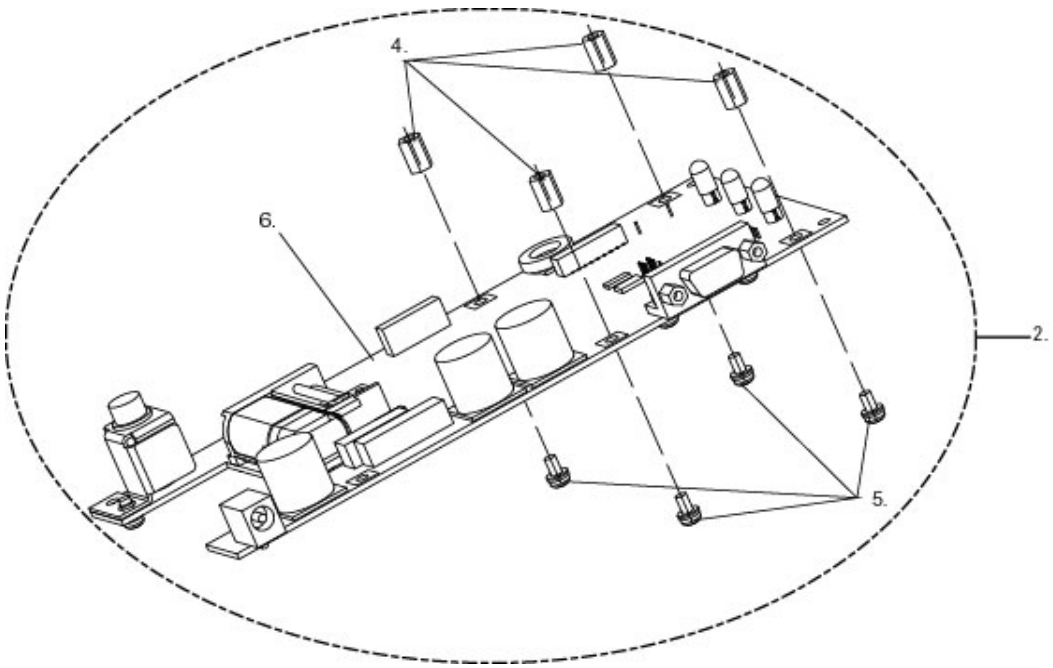
Assembly 792-M101 (Front cover, Assy)

No	Parts number	Parts Name	Remarks
1	792-1001	Cover, front	
2	792-1008	Window, LCD	
3	792-1005	Window, light diffusion	
4	792-1006	Mirror, reflect	
5	792-021A	Membrane switch	
6	---	Tapping screw	M2*3
7	248-6014	Printer cutter	

A) Remove “3. Screws with spring washer” and remove “1. LCD, Assy”.
Note: You have to take care when you remove Flexible Printed Circuit of LCD.



B) Remove “5. Screw with spring washer” and remove “4. Spacer”.



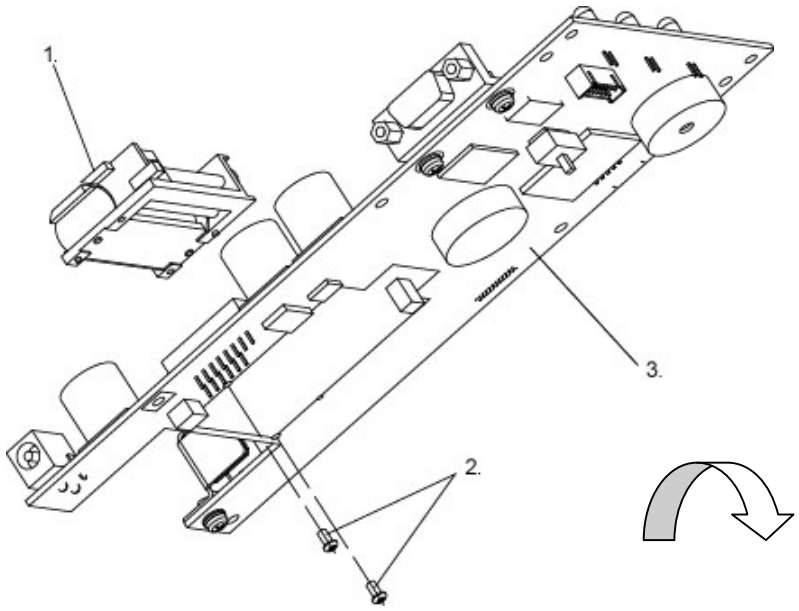
Assembly 792-M301 (Main unit base (Process4))

No	Parts number	Parts Name	Remarks
1	792-M401	LCD, Assy	
2	792-M311	Main unit base (process3)	
3	---	Screw with spring washer	M3*6

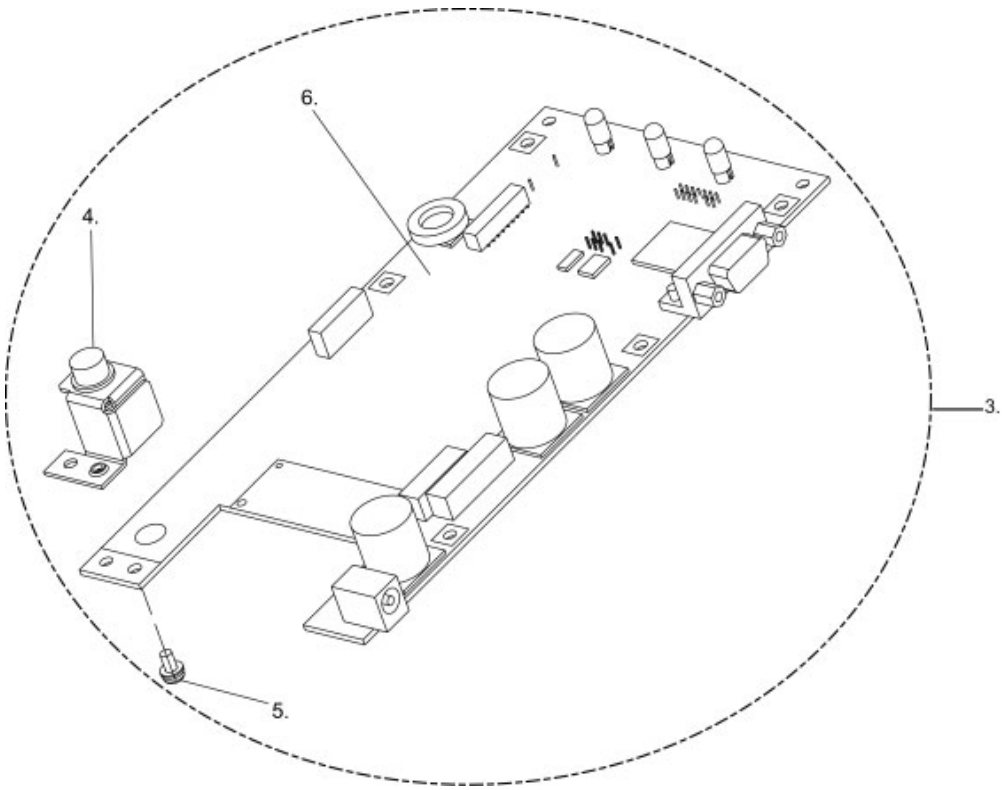
Assembly 792-M311 (Main unit base (Process3))

No	Parts number	Parts Name	Remarks
4	C81-0058	Spacer (brass)	
5	---	Screw with spring washer	M3*6
6	792-M321	Main unit base (process2)	

A) Remove “2. Tapping screw” and remove “1. Thermal printer”.



B) Remove “2. Screw with spring washer”
C) Melt soldering part between “4. Connector, Assy” and “6. Main board” and remove “4. Connector Assy”.



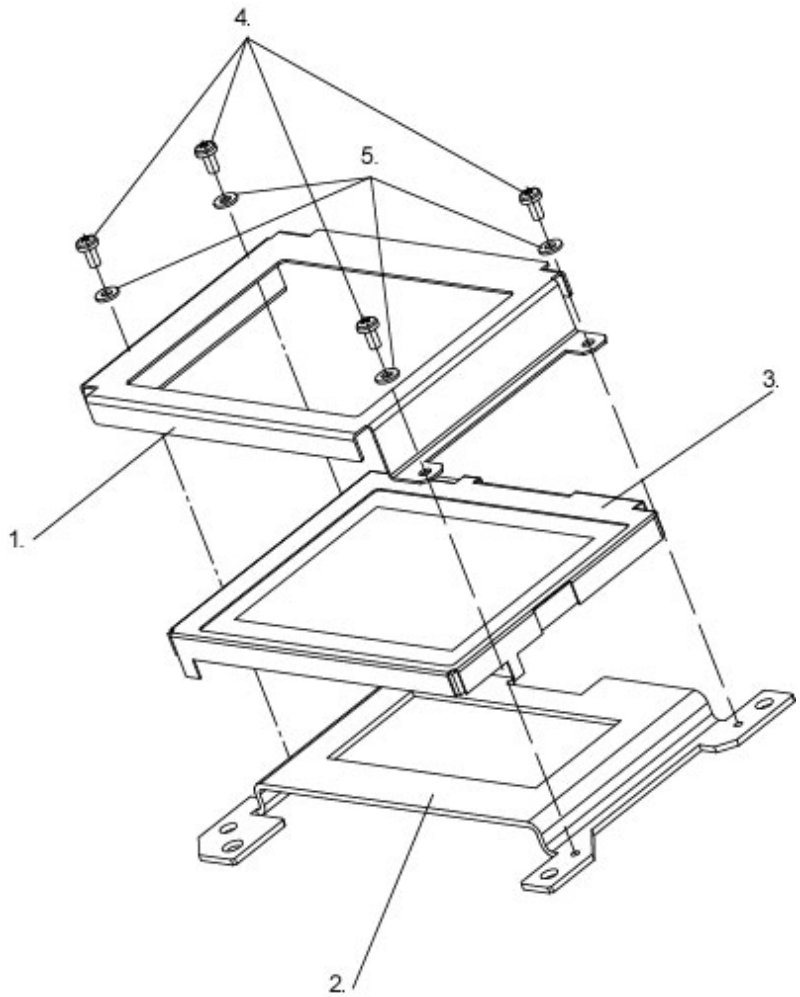
Assembly 792-M321 (Main unit base (Process2))

No	Parts number	Parts Name	Remarks
1	E20-0026	Thermal printer	MTP102-16B
2	----	Tapping screw	M2.3*4
3	792-M331	Main unit base (process1)	

Assembly 792-M331 (Main unit base (Process1))

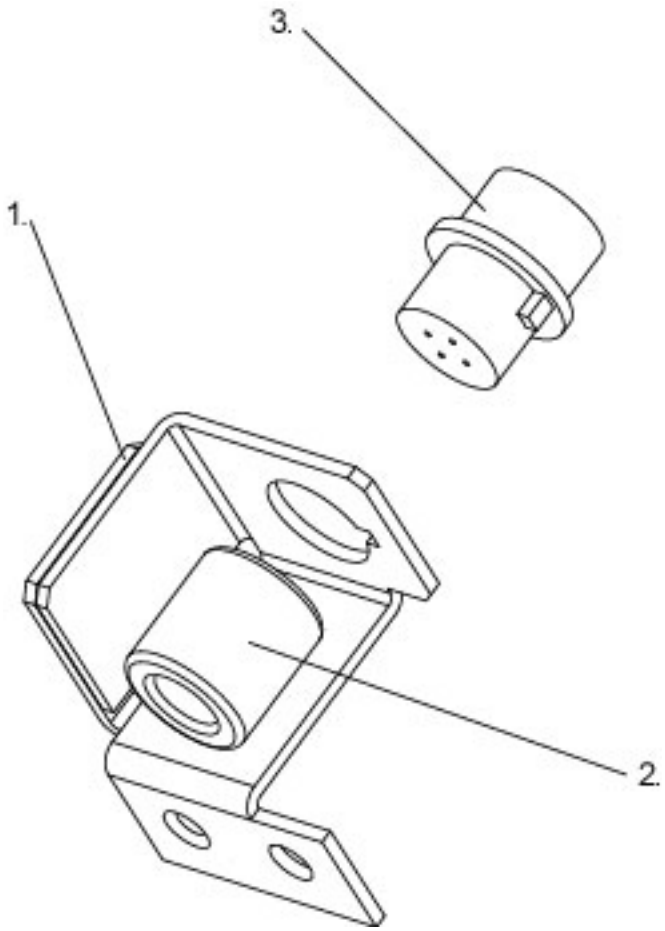
No	Parts number	Parts Name	Remarks
4	792-M501	Connector, Assy	
5	---	Screw with spring washer	M3*6
6	792-010A	Main board	

A) Remove “4. Screws” from “2. Bracket, LCD”.
B) Remove “1. Frame, LCD” and “3. LCD”



Assembly 792-M401 (LCD, Assy)

No	Parts number	Parts Name	Remarks
1	792-2004	Frame, LCD	
2	792-2005	Bracket, LCD	
3	E02-0022	LCD	ETMG240160D-05
4	---	Screws	
5	---	Spring washer	


3.
1.
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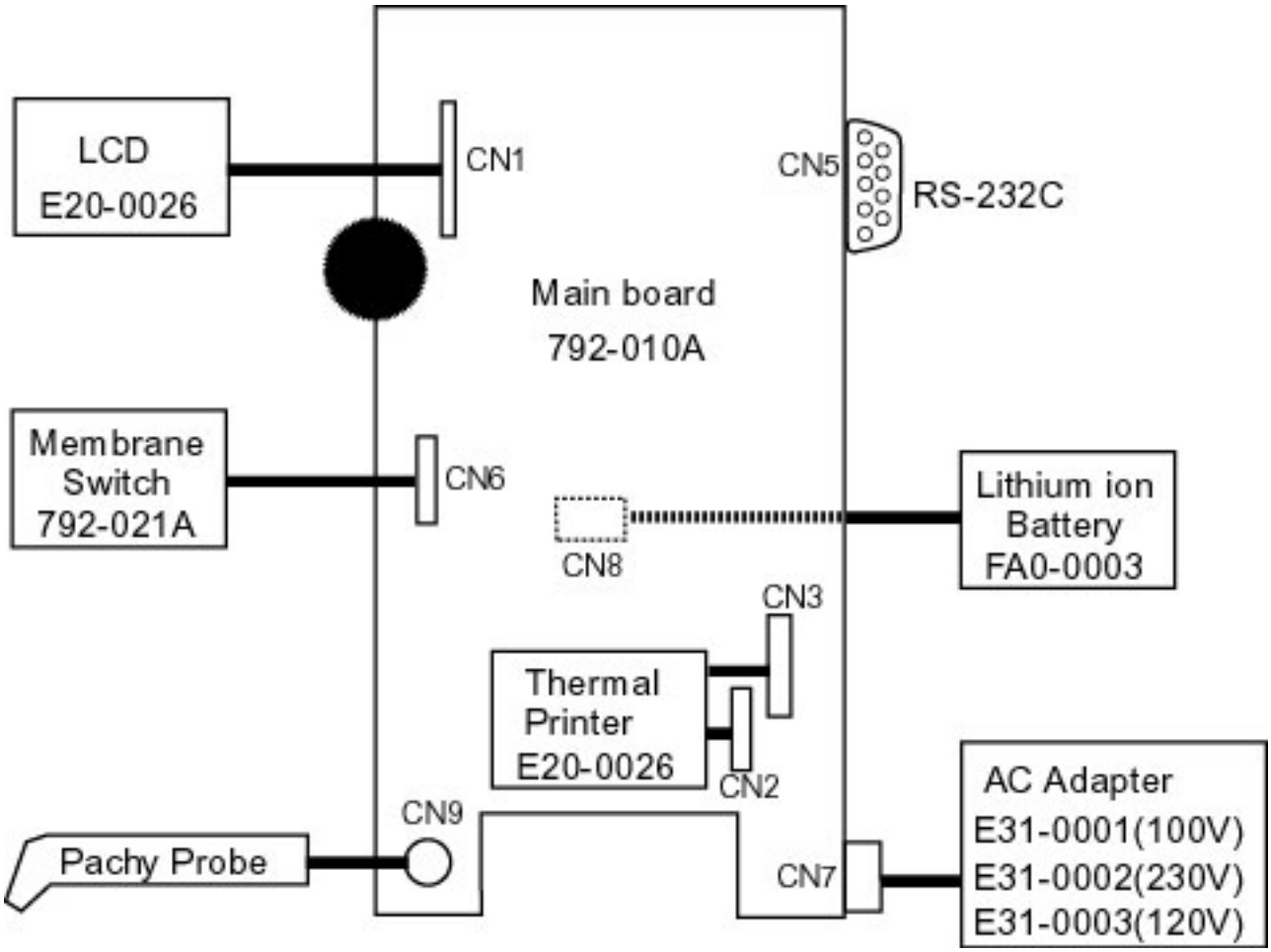
Assembly 792-M501 (Connector, Assy)

No	Parts number	Parts Name	Remarks
1	792-2003	Bracket, probe connector	
2	F22-0023	Ferrite core	
3	792-040A	Probe harness	

4. Wiring Diagram



5. Voltage in connector

Main board (792-010A)

Connector No	Pin No.	Cord Color.	Output	Note
CN7	1	---	+7V	
	2	---	GND	
	3	---	GND	
CN8	1	Red	+3.7V	Lithium ion battery
	2	Black	GND	Lithium ion battery